# MSMD-1119 & MSMD-1119-TS

User Guide

**BARCO**

Visibly yours

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# 1. WELCOME!

## 1.1    About the product

### Overview

Thank you for choosing this MSMD-1119 or MSMD-1119-TS display!

The Barco MSMD-1119 & MSMD-1119-TS is a 19-inch healthcare display specifically designed and certified for use at the point of patient care. Thanks to its excellent image quality, lightweight design and easy-to-wipe protective housing, the MSMD-1119 & MSMD-1119-TS is a perfect fit for hospital computer carts and dental units.

### Equipped to perform

•   Advanced LCD technology > bright & crisp images
•   Wide-screen aspect ratio (16:9) > large & flexible workspace
•   Built-in USB hub & loudspeakers > enhanced usability
•   Wide range of resolutions supported (up to 1920 x 1080) > optimum versatility

### Designed to be safe

•   Sealed housing & splash-proof front > easy to clean & disinfect
•   Integrated cable management > safe & clutter-free setup
•   'Round edges' design & shatterproof front > optimum user/patient safety
•   Certified display > a safe choice for healthcare environments

### Built to last

•   LED backlights > long lifetime & low power consumption
•   Rugged splash-proof housing > fit for intensive use
•   'Evo-Safe' design > long-term availability & compatibility

### Touchscreen version

•   The touchscreen version is equipped with a multi touch PCAP touchscreen.
•   Interface of the touchscreen is through USB upstream port.
•   The touchscreen is compatible with:
    -   Windows 7 using built in multi touch HID driver.
    -   Linux using built in multi touch HID driver.
    -   Win XP using customer driver.

## 1.2    What's in the box

### Overview

Your MSMD-1119 & MSMD-1119-TS display comes with (depending on the ordered configuration some optional items might not be present):

- this MSMD-1119 & MSMD-1119-TS user guide (optional)
- a VGA video cable (optional)
- a USB cable (optional)
- a set of AC power cords (optional)
- an external +12 VDC power supply (optional)
- a stand/handle and relevant accessories (optional)
- a DC extension cable (optional)
- an IP33 rubber cap (optional)
- Power supply holder (optional)

**Keep your original packaging. It is designed for this display and is the ideal protection during transport and storage.**

# 2. PARTS, CONTROLS AND CONNECTORS

## 2.1 Display front view

**Overview**
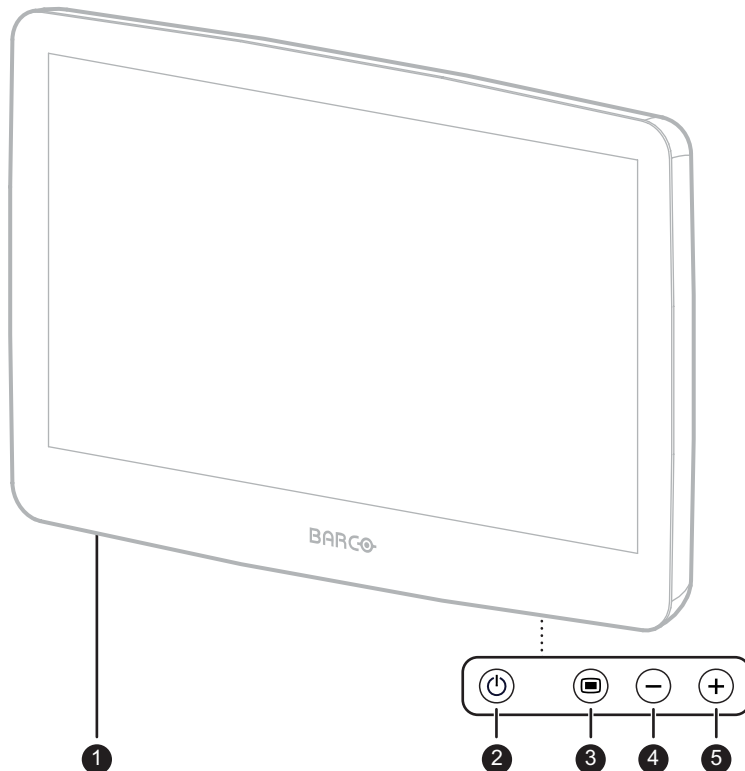


Image 2-1

| | |
|---|---|
| ① | 2 USB downstream connectors (under a sealing rubber cap) |
| ② | Stand-by key |
| ③ | No OSD: enter OSD menu |
| | In OSD: Enter key |
| | When keyboard locked: Keyboard unlock key (see "Keyboard unlocking", page 19) |
| ④ | No OSD: Luminance decrease key |
| | In OSD: Left/Down key |
| ⑤ | No OSD: Luminance increase key |
| | In OSD: Right/Up key |

## 2.2 Display rear view

**Overview**
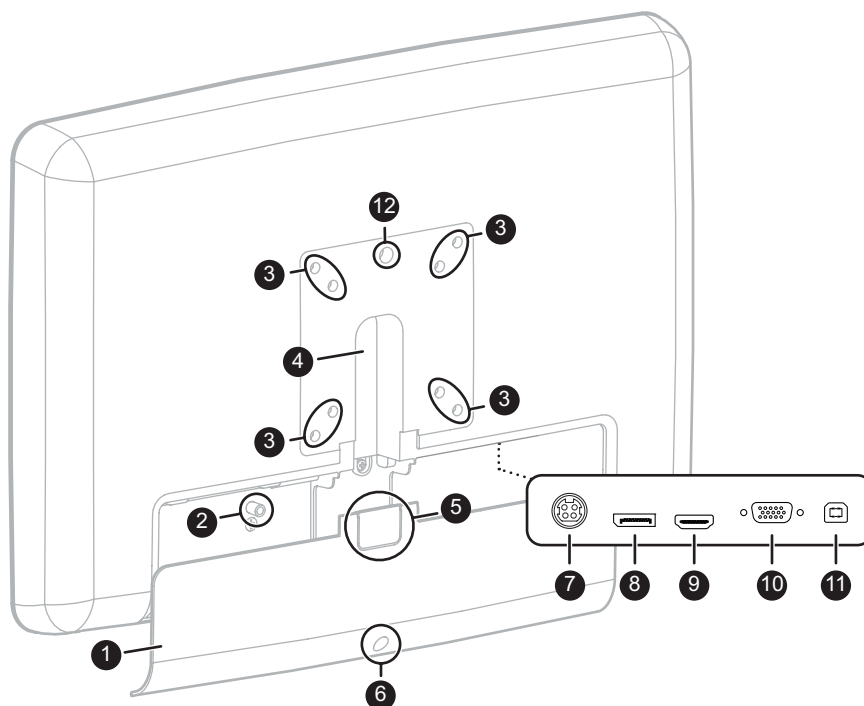


Image 2-2

| | |
|---|---|
| 1 | Connector compartment cover |
| 2 | Protective earth pin |
| 3 | VESA mount screw holes (100mm and 75mm) |
| 4 | Cable routing channel |
| 5 | Cable routing channel expansion clip |
| 6 | Connector compartment cover fixation screw |
| 7 | +12 VDC power input connector |
| 8 | DisplayPort video input connector |
| 9 | HDMI video input connector |
| 10 | VGA video input connector |
| 11 | USB upstream connector |
| 12 | Positioning hole for rubber cap |

## 2.3 Stand/handle parts

**Overview**

Depending on the ordered configuration, a stand/handle accessory will be included in the box. This accessory can be used either as VESA desktop stand or as VESA handle to easily move around the display while mounted on the VESA arm.

# 3. INSTALLATION

### About the installation of the display

The next section describes how to install your MSMD-1119 or MSMD-1119-TS display. A first subsection shows you how to quickly install your display for use on a desk, without IP protection requirements. The second subsection explains a more detailed installation procedure with IP protection option, VESA arm handle option and detailed cable routing description.

> ⚡ **WARNING: Read all the important safety information before installing and operating your MSMD-1119 or MSMD-1119-TS display. Please refer to the dedicated chapter in this user guide.**

## 3.1 Quick installation procedure

> ⚡ **WARNING: The protection against ingress of water IP33 will be void when installing the display according to this quick installation procedure. If this would be an issue, please follow the detailed installation procedure which is described in the next section.**

### To quickly install the display

1. Fix the 4 rubber pads to the bottom of the stand.

2. Mount the display firmly to the stand/handle using 4 M4 x 16 mm screws.

3. Route all cables through the oval cable gap in the stand.

4. Connect one or more video sources, then connect the power to the display.
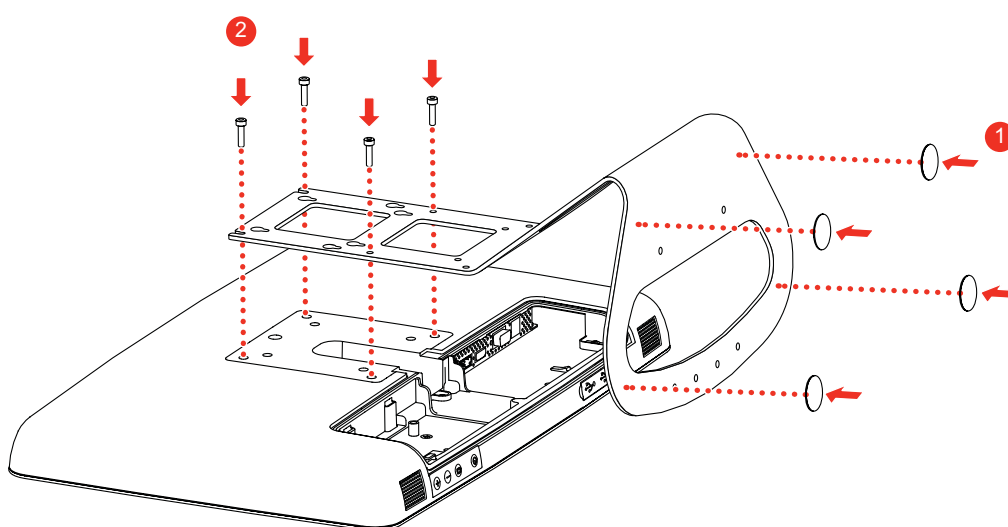


Image 3-1
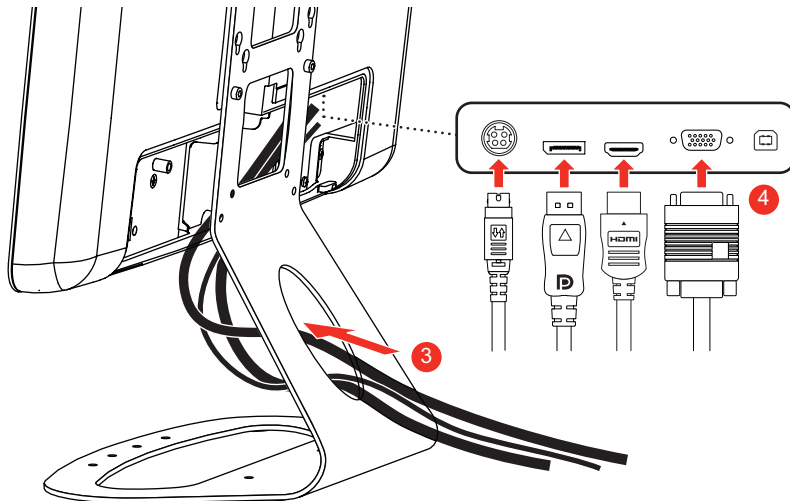
Image 3-2

# 3.2 Detailed installation procedure

## Overview

- • Step 1: Stand or handle assembly (optional)
- • Step 2: Cable routing preparation (optional)
- • Step 3: Cover removal
- • Step 4: Cable connection
- • Step 5: Cable routing
- • Step 6: Cover reattachment
- • Step 7: Stand/handle mounting or VESA arm mounting
- • Step 8: Optional power supply holder

### 3.2.1 Step 1: Stand or handle assembly (optional)

### To assemble as stand option

1. Fix the 4 rubber pads to the bottom of the stand.
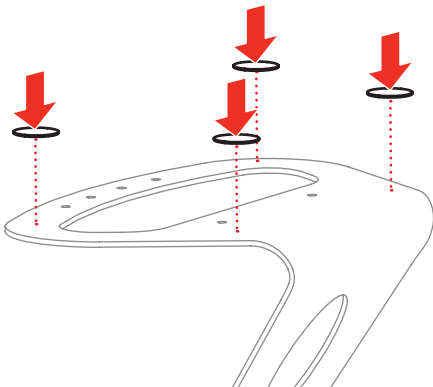


Image 3-3

### To assemble as handle option

1. Slide one of the two handle plastics upwards, into the bottom of the handle.

2. Slide the other plastic downwards and press it into the lower plastic so that both are fixed in each other.
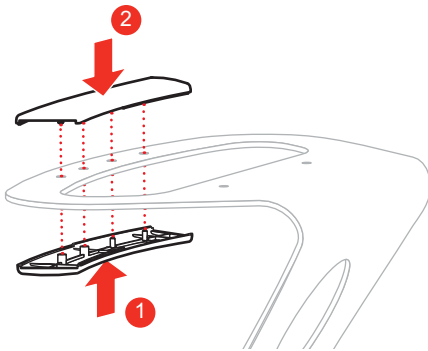


Image 3-4

### 3.2.2 Step 2: Cable routing preparation (optional)

#### About cable routing preparation

In case you will be using the display with the stand/handle option mounted, all cables should be first routed through the stand/handle before connecting or mounting anything else. Depending on the mounting position of the stand/handle, the cables should be routed through a different gap. Below is an overview of the different mounting options and which cable gap to use in each situation.

When you're also using the rubber cap to guarantee the IP protection degree then the cables must be routed through this cap as well.
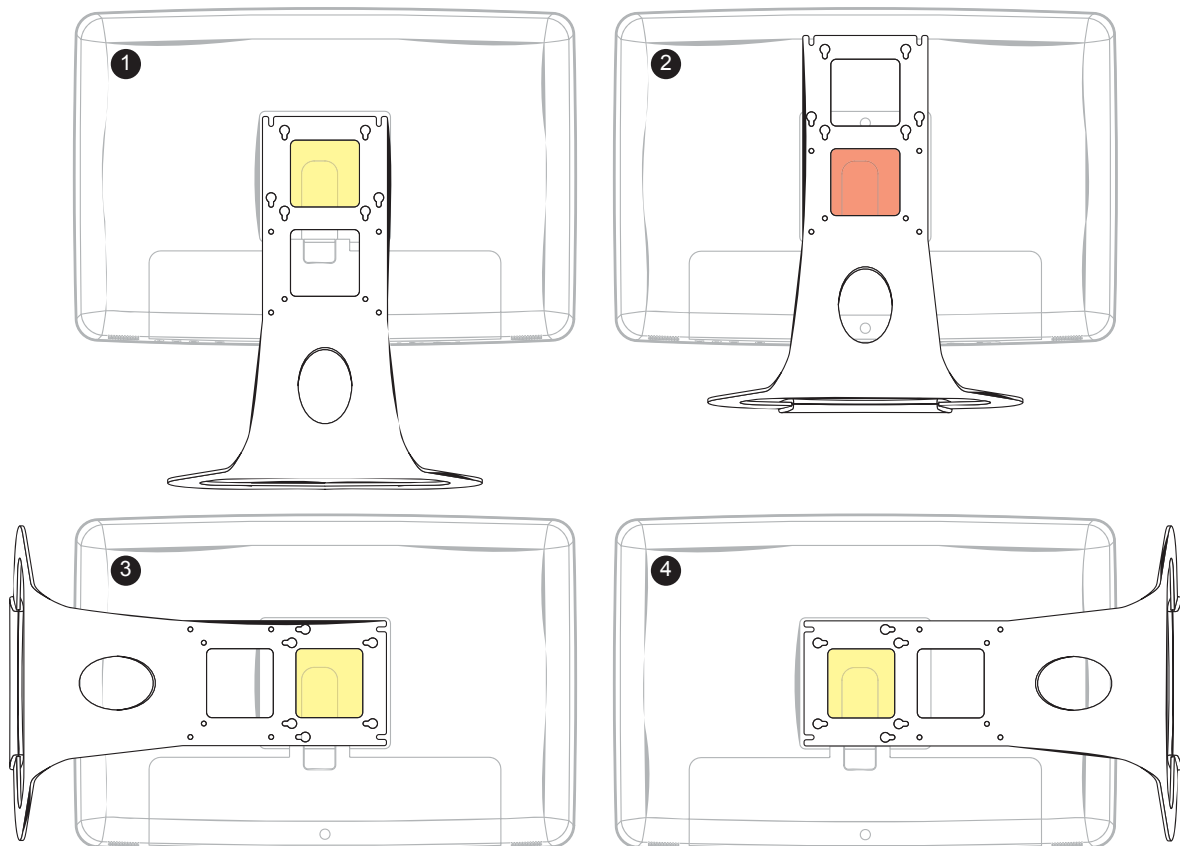


Image 3-5

| | |
|---|---|
| **1** | Table stand option |
| **2** | Lower handle option |
| **3** | Right handle option |
| **4** | Left handle option |

## To prepare the stand/handle and rubber cap for cable routing

1. Route the cables through the appropriate cable gap in the stand/handle.

2. Route the cables through the rubber cap.
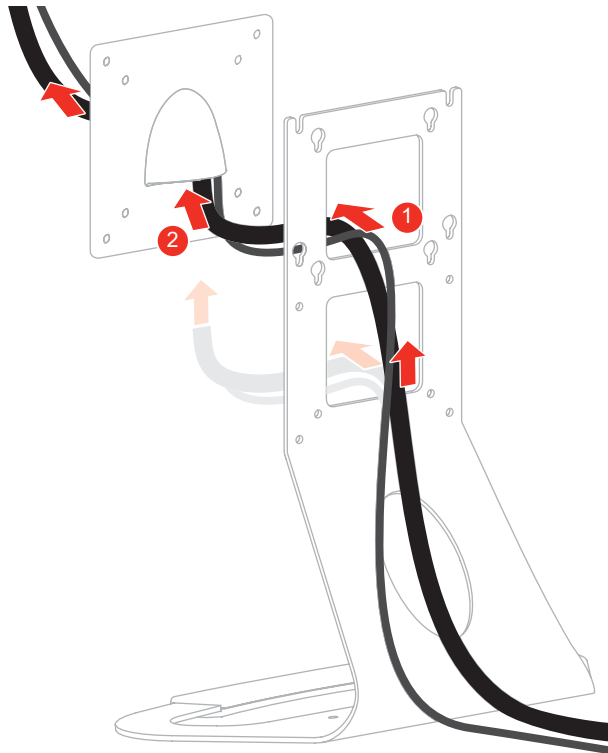


Image 3-6

> **Warning:** *The protection against ingress of water IP33 will be void when installing the display without the rubber cap.*

### 3.2.3    Step 3: Cover removal

## To remove the connector compartment cover

1. Loosen the screw fixing the connector compartment cover.

2. Slide the cover downwards to remove it from the display.
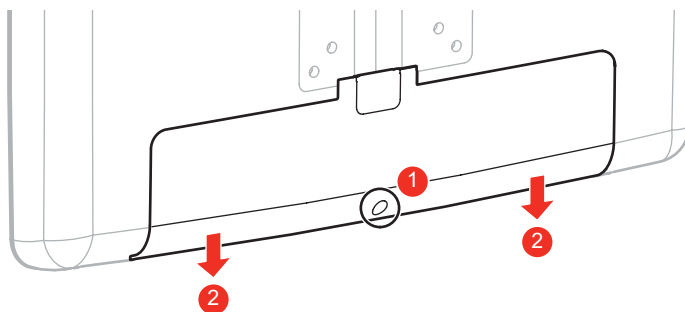


Image 3-7

### 3.2.4 Step 4: Cable connection

> ⚠ **CAUTION: Make sure that all equipment is switched off before connecting it to the MSMD-1119 or MSMD-1119-TS.**

> 📄 **Whenever you are mounting the display on the stand/handle or when you are using the rubber cap option, please make sure that all cables are routed through the stand/handle and/or rubber cap before connecting them to the MSMD-1119 or MSMD-1119-TS.**

**To connect the cables**

1. To avoid the risk of electrical shock, earth the MSMD-1119 or MSMD-1119-TS by connecting the protective earth pin to a grounded outlet (by a screw with lock washer, M4 x 12 max).

2. Connect one or more video sources to the available video inputs of your display. Do this by using the appropriate video cable(s).

3. Connect the display's USB upstream connector to a USB downstream source if you want to use your display's USB downstream connectors or if you would like to make use of the sound option of your display. Do this by using the supplied USB cable.

4. Connect the DC power cord of the DC power supply to the **+12 VDC** power input of your MSMD-1119 or MSMD-1119-TS display.

5. Plug one end of the AC power cord into the DC power supply.

6. Plug the other end of the AC power cord into a grounded power outlet.
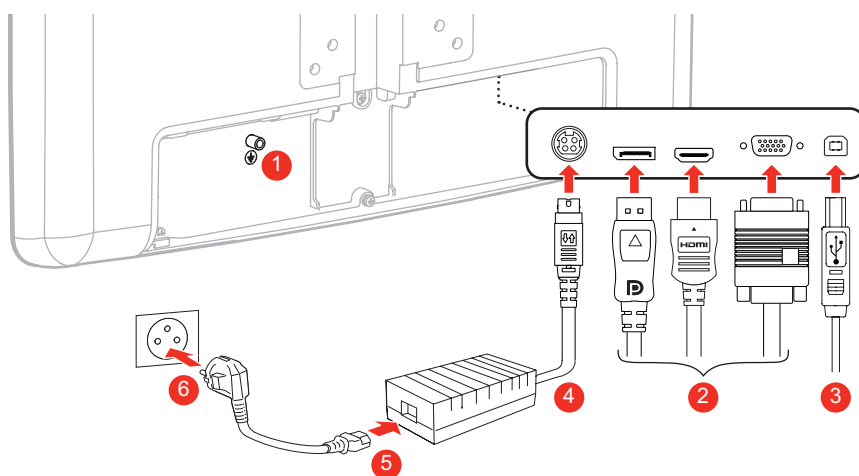


Image 3-8

**Power supply requirements**

Depending on the ordered configuration, an external 12V DC power supply will be included in the box. If this is not the case, the display can still be powered with a compatible power supply but then the appropriate pinout and certification requirements must be respected. The system integrator is responsible for the overall system certification.

The DC power cord connector of the power supply must be a 4 pin Hosiden plug or equivalent with the following pinout:
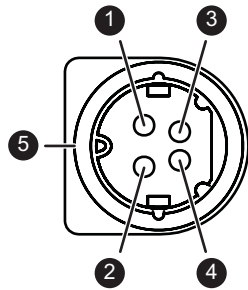
Image 3-9

| | |
|---|---|
| 1 | GND |
| 2 | +V |
| 3 | GND |
| 4 | +V |
| 5 | Earth |

### 3.2.5    Step 5:  Cable routing

#### To route the cables

1. Route all connected cables through the cable routing channel.
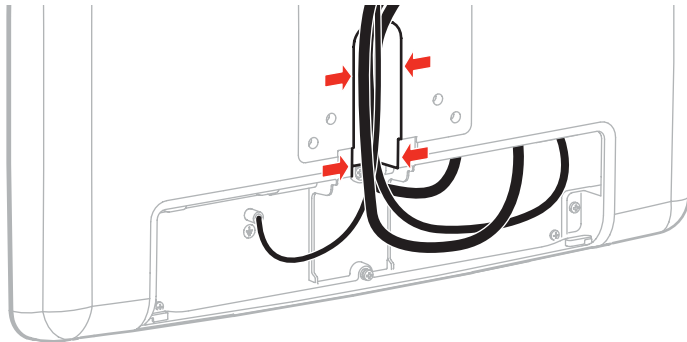


Image 3-10

### 3.2.6    Step 6:  Cover reattachment

#### For displays to be mounted on the stand/handle or on a VESA arm with internal cable routing provisions

1. Slide the connector compartment cover upwards so that it fits onto the display.

2. Reattach the connector compartment cover by tightening the fixation screw.
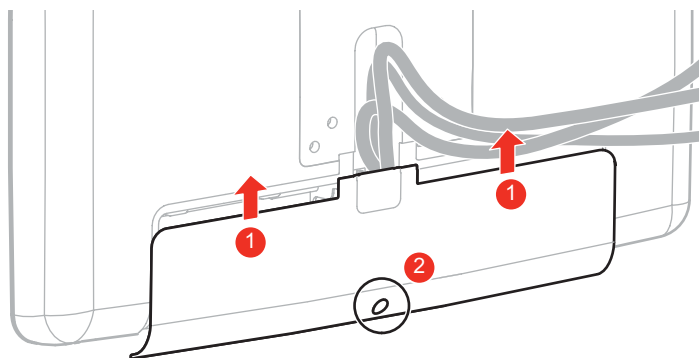
Image 3-11

## For displays to be mounted on a VESA arm without internal cable routing provisions

1. Remove the cable routing expansion clip from the connector compartment cover.

2. Slide the connector compartment cover upwards so that it fits onto the display.

3. Reattach the connector compartment cover by tightening the fixation screw.



Image 3-12

> ***Warning:*** *The protection against ingress of water IP33 will be void when installing the display with the cable routing expansion clip removed from the connector compartment cover.*

### 3.2.7 Step 7: Stand/handle mounting or VESA arm mounting

#### Different mounting positions for stand and handle

The stand/handle and display consist of different mounting holes. Depending on the desired mounting position and applicable VESA standard (75 mm or 100 mm), different mounting holes should be used. Below is an overview of all options and which mounting holes to use for each configuration.
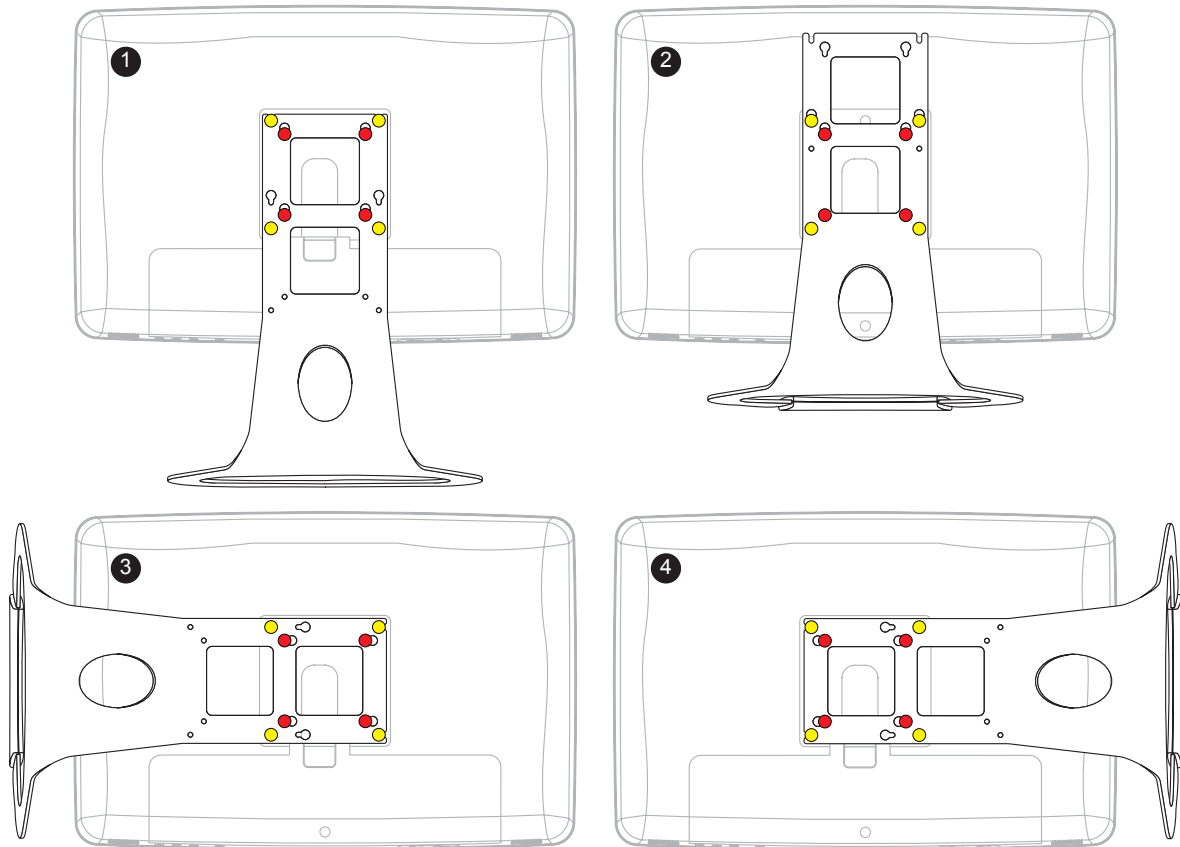
Image 3-13

| | |
|---|---|
| ❶ | Table stand option |
| ❷ | Lower handle option |
| ❸ | Right handle option |
| ❹ | Left handle option |

## To mount the display on the stand/handle

1. Mount the display firmly to the stand/handle using 4 M4 screws.
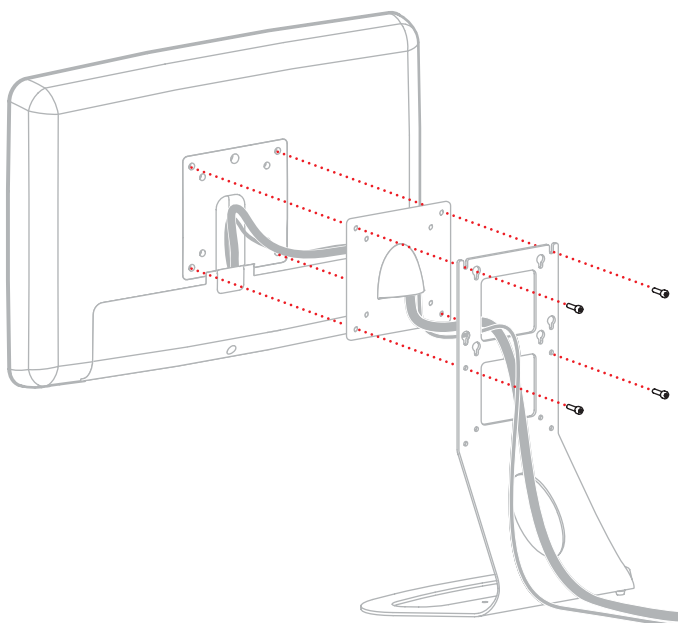
Image 3-14

**Warning:** *Please consider the following rule to define an adequate screw length depending on the mounted components:*

*Standard length: 13mm*

*Rubber cap: add 2,5 mm*

*Stand/handle: add 3 mm*

*VESA arm: add VESA plate thickness*

**Tip:** *The display mounted on the stand can be screwed to the table by using the available holes in the stand.*

**Warning:** *Pay attention that none of the cables gets pinched between the display and the stand/handle while mounting the display on the stand/handle.*

**Warning:** *The protection against ingress of water IP33 will be void when installing the display without the rubber cap.*

## To mount the display on a VESA arm

1. Mount the display firmly to the arm using 4 M4 screws.
   Depending on the arm's VESA standard (75 mm or 100 mm), different mounting holes on your display should be used.

   **Warning:** *Please consider the following rule to define an adequate screw length depending on the mounted components:*

   *Standard length: 13mm*

   *Rubber cap: add 2,5 mm*

   *Stand/handle: add 3 mm*

   *VESA arm: add VESA plate thickness*

   **Warning:** *The monitor VESA mounting interface has been evaluated by qualified Certification Bodies with a safety factor 6, yet the stability of the overall system mounting solution will have to be evaluated by the system integrator in the final medical system configuration.*

   **Warning:** *The protection against ingress of water IP33 will be void when installing the display without the rubber cap.*

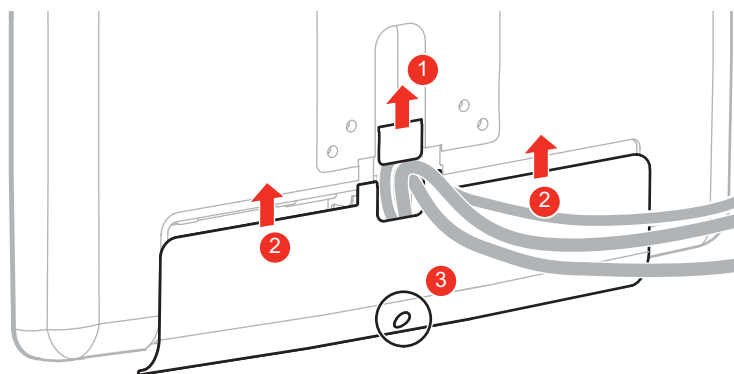   **Warning:** *The protection against ingress of water IP33 will be void when installing the display with the cable routing expansion clip removed from the connector compartment cover. This is required for displays mounted on a VESA arm without internal cable routing provisions.*

### 3.2.8    Step 8:  Optional power supply holder

#### To mount the power supply holder

1. Partially unscrew the two screws of the foot as shown in the figure below.

2. Put the power supply holder over the two screws.

3. Slide the power supply over the two screws.
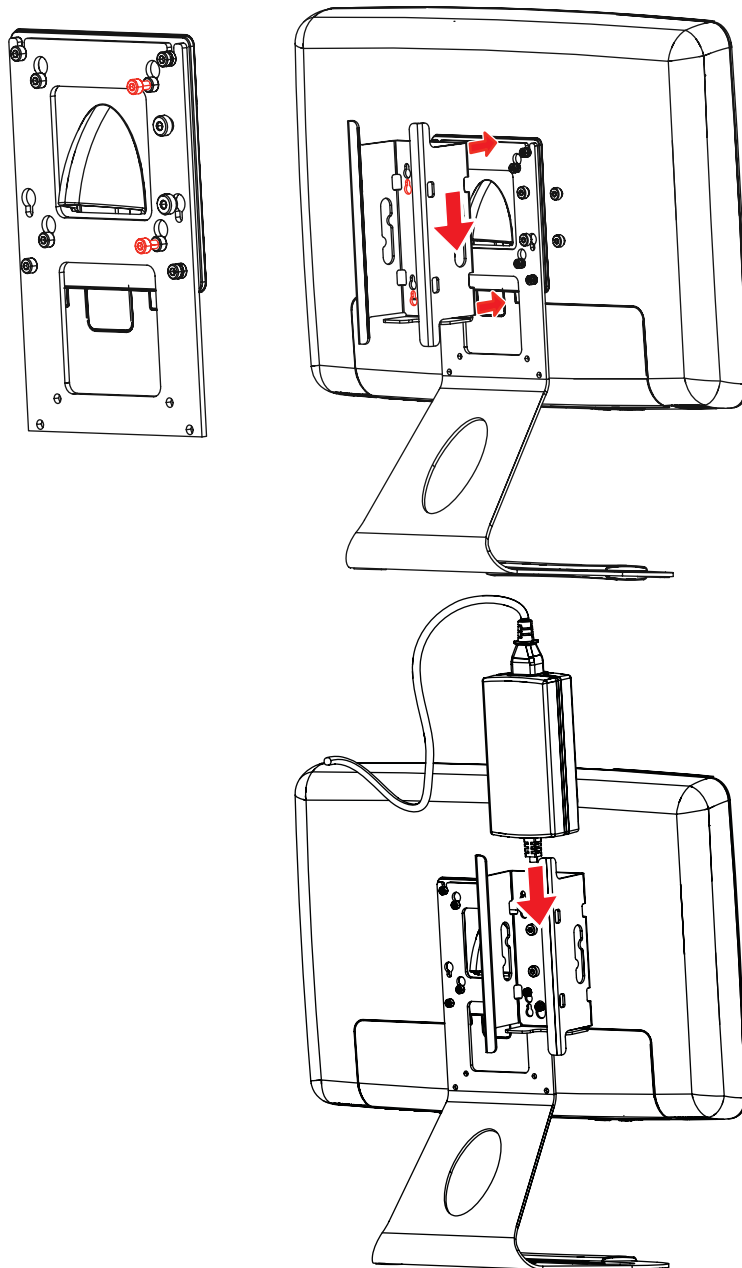
Image 3-15

4. Fasten the screws of the foot.

5. Slide the power supply in the power supply holder.

# 4. DAILY OPERATION

## 4.1    Recommendations for daily operation

### Optimize the lifetime of your display

Enabling the Display Power Management System (DPMS) of your display will optimize its diagnostic life-time by automatically switching off the backlight when the display is not used for a specified period of time. By default, DPMS is enabled on your display, but it also needs to be activated on your workstation. To do this, go to "Power Options Properties" in the "Control Panel".

**Barco recommends setting DPMS activation after 20 minutes of non-usage.**

### Use a screen saver to avoid image retention

Prolonged operation of an LCD with the same content on the same screen area may result in a form of image retention.

You can avoid or significantly reduce the occurrence of this phenomenon by using a screen saver. You can activate a screen saver in the "Display properties" window of your workstation.

**Barco recommends setting screen saver activation after 5 minutes of non-usage. A good screen saver displays moving content.**

In case you are working with the same image or an application with static image elements for several hours continuously (so that the screen saver is not activated), change the image content regularly to avoid image retention of the static elements.

### Understand pixel technology

LCD displays use technology based on pixels. As a normal tolerance in the manufacturing of the LCD, a limited number of these pixels may remain either dark or permanently lit, without affecting the diagnostic performance of the product. To ensure optimal product quality, Barco applies strict selection criteria for its LCD panels.

**To learn more about LCD technology and missing pixels, consult the dedicated white papers available at www.barco.com/healthcare.**

## 4.2    On/Off switching

### To switch ON your display:

1. While your display is off, press and hold the Stand-by key (⏻) for approximately 3 seconds.

### To switch OFF your display:

1. While your display switched on, press and hold the Stand-by key (⏻) for approximately 3 seconds.

> **When pressing the Stand-by key (⏻) for less than 3 seconds, the shortkey function of this key will be executed instead. Please refer to the dedicated chapter for more information about your display's shortkey functions.**

## 4.3    OSD menu activation

### To activate your OSD menu

1. If not already done so, switch on the display by pressing and holding the Stand-by key (⏻) for approximately 3 seconds.

2. Press the Menu/Enter key (▣) to activate the OSD menu.

   As a result, the OSD main menu comes up in the top left corner of the screen. If no further actions are taken within the following 30 seconds, the OSD menu will disappear again.

> **The time-out of the OSD menu automatic close function can be adjusted in the OSD menu.**

> **The OSD menu position can be adjusted in the OSD menu.**

## 4.4    OSD menu navigation

### To navigate through the OSD menu

- Use the – or + keys to move through the (sub)menus, change values or make selections.
- To go into a submenu or confirm adjustments and selections, use the ▣ key.
- Use the ⏻ key to return or exit a (sub)menu.

## 4.5    Shortkey functions

### About shortkey functions

The concept of shortkey functions is to present a selection of commonly used functions immediately available without the need to navigate through the OSD Menu.

The different available shortkey functions are:

- Keyboard unlocking
- Luminance adjustment

**Overview of shortkeys**

| ▣ | Keyboard unlocking |
|---|---|
| − | Luminance decrease |
| + | Luminance increase |

### 4.5.1    Keyboard unlocking

**To quickly unlock the keyboard**

1. While no OSD menu is on the screen, press the Menu/Enter key (▣) shorlty, followed by a press and hold on the Menu/Enter key (▣) until a unlock notification is shown (approximately 5 seconds).

### 4.5.2    Luminance adjustment

**To quickly adjust the luminance**

1. While no OSD Menu is on the screen, press the luminance decrease (-) or luminance increase (+) keys to adjust the luminance as desired.

# 4.6    Sound option

**About the sound option**

Depending on the order details, the MSMD-1119 or MSMD-1119-TS display can be equipped with two speakers that will play the audio received through the USB upstream connection. When USB is connected to the PC, the operating system will automatically look for and install the audio USB driver. If this doesn't happen, an audio USB driver can still be installed manually.

In some MSMD-1119 or MSMD-1119-TS models, the audio will automatically switch to the HDMI or DP audio source in case the corresponding video input is selected.

# 5. ADVANCED OPERATION

## 5.1    Display menu

### Overview

- Source input
- Luminance
- OSD menu
- Advanced menu
- Power saving
- Touchscreen (only for MSMD-1119-TS)

### 5.1.1    Source input

### About source inputs

The available source inputs for your display are:

- DisplayPort
- HDMI
- VGA

### To select the source input

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu.

3. Enter the *Source Input* submenu.
   The command bar *Source Input* is highlighted and a small pointer appears to the left of it.

4. Select one of the available source inputs and confirm.

### 5.1.2    Luminance

### To adjust the luminance level

1. Bring up the OSD main menu.

2. Navigate to the *Image* menu.

3. Enter the *Luminance* submenu.
   The command bar *Luminance* is highlighted and a small pointer appears to the left of it.

4. Set the luminance level as desired and confirm.

### 5.1.3    OSD menu

#### Overview

- •   OSD off timer
- •   Languages
- •   OSD direction
- •   Horizontal OSD position
- •   Vertical OSD position
- •   Menu blend

### 5.1.3.1   OSD off timer

#### About OSD off timer

The display will automatically exit the OSD menu after the time set in this menu.  The available OSD time-out values for your display are:

- •   5 sec.
- •   10 sec.
- •   20 sec.
- •   4 minutes

#### To select the OSD off timer

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu, then enter the *OSD Menu* submenu.

3. Enter the *OSD Off Timer* submenu.

4. Select one of the available OSD time-out values and confirm.

### 5.1.3.2   Languages

#### About languages

The available languages for your display OSD menu are:

- •   English
- •   Spanish
- •   German
- •   Italian
- •   French

#### To select the language

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu, then enter the *OSD Menu* submenu.

3. Enter the *Language* submenu.

4. Select one of the available languages and confirm.

### 5.1.3.3   OSD direction

#### About OSD direction

The available directions for the OSD menu are:

- 0°
- 90°
- 180°
- 270°

**To select the OSD direction**

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu, then enter the *OSD Menu* submenu.

3. Enter the *OSD Direction* submenu.

4. Select one of the available OSD menu directions and confirm.

### 5.1.3.4   Horizontal OSD position

**To adjust the horizontal OSD position**

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu, then enter the *OSD Menu* submenu.

3. Enter the *H Position* submenu.
   The command bar *H Position* is highlighted and a small pointer appears to the left of it.

4. Set the horizontal OSD position as desired and confirm.

### 5.1.3.5   Vertical OSD position

**To adjust the vertical OSD position**

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu, then enter the *OSD Menu* submenu.

3. Enter the *V Position* submenu.
   The command bar *V Position* is highlighted and a small pointer appears to the left of it.

4. Set the vertical OSD position as desired and confirm.

### 5.1.3.6   Menu blend

**To adjust the OSD menu blend value**

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu, then enter the *OSD Menu* submenu.

3. Enter the *Menu Blend* submenu.
   The command bar *Menu blend* is highlighted and a small pointer appears to the left of it.

4. Set the OSD menu blend value as desired and confirm.

### 5.1.4   Advanced menu

**Overview**

- Keyboard lock
- VGA auto adjust
- Factory set

### 5.1.4.1  Keyboard lock

#### About the keyboard lock

It is possible to lock the keyboard. When locked all keys (except standy key) are locked. To unlock the keyboard see "Keyboard unlocking", page 19.

#### To lock the keyboard

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu, then enter the *Advanced menu* submenu.

3. Enter the *Keyboard lock* submenu.
   The command bar *Keyboard lock* is highlighted and a small pointer appears to the left of it.

4. Set the Keyboard lock value as desired and confirm.

### 5.1.4.2  VGA auto adjust

#### About VGA auto adjust

When VGA auto adjust is enabled, the phase, position and gain will be automatically adjusted when a VGA signal is applied.

#### To enable/disable VGA auto adjust

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu, then enter the *Advanced menu* submenu.

3. Enter the *VGA auto adjust* submenu.
   The command bar *VGA auto adjust* is highlighted and a small pointer appears to the left of it.

4. Enable/disable the VGA auto adjust as desired and confirm.

### 5.1.4.3  Factory set

#### About the factory set option

When the factory set option is activated, following parameters will be restored to their original factory values:

- Luminance (70)
- OSD menu off timer (10s)
- OSD language (English)
- OSD direction (0°)
- OSD horizontal position (0)
- OSD vertical position (0)
- OSD menu blend (8)
- VGA auto adjust (Off)
- Power saving (On)
- Touch screen (On) (only for MSMD-1119-TS)
- Keyboard lock (Unlocked)

#### To reset the display

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu, then enter the *Advanced menu* submenu.

3. Enter the *Factory set* submenu.
   The command bar *Factory set* is highlighted and a small pointer appears to the left of it.

4. Select the *Factory set* option and confirm

### 5.1.5 Power saving

#### About power saving

When power saving is enable, the display will go in standby mode (backlight off, low power mode) when no signal is available on the selected input.

#### To enable/disable power saving

1. Bring up the OSD main menu.

2. Navigate to the *Display* menu.

3. Enter the *Power saving* submenu.
   The command bar *Power saving* is highlighted and a small pointer appears to the left of it.

4. Enable/disable power saving and confirm.

### 5.1.6 Touchscreen (only for MSMD-1119-TS)

#### About the touchscreen

The touchscreen can be disabled for cleaning purposes.

#### To enable/disable the touchscreen

1. Bring up the OSD main menu.

2. Navigate to the *System* menu.

3. Enter the *Touchscreen* submenu
   The command bar *Touchscreen* is highlighted and a small pointer appears to the left of it.

4. Enable/disable the touchscreen as desired and confirm.

## 5.2 VGA menu

**This menu item is only accessible when VGA input is selected.**

### 5.2.1 Geometry Adjustment

#### About geometry adjustment

When geometry adjustment is activated, all geometrical parameters are adjusted to fit he image on the screen (full screen image required).

#### To activate auto adjustment

1. Bring up the OSD main menu.

2. Navigate to the *VGA* menu.

3. Enter the *Geometry Adjustment* submenu.
   The automatic geometry adjustment is activated.

## 5.2.2 Phase

**This menu item is only accessible when VGA input is selected.**

### About phase

The Phase can be manually adjusted by following this procedure.

### To manually adjust the phase

1. Bring up the OSD main menu.

2. Navigate to the *VGA* menu.

3. Enter the *Phase* submenu.
   The command bar *Phase* is highlighted and a small pointer appears to the left of it.

4. Set the phase as desired and confirm.

## 5.2.3 Clock

**This menu item is only accessible when VGA input is selected.**

### About clock

The Clock can be manually adjusted by following this procedure.

### To manually adjust the clock

1. Bring up the OSD main menu.

2. Navigate to the *VGA* menu.

3. Enter the *Clock* submenu.
   The command bar *Clock* is highlighted and a small pointer appears to the left of it.

4. Set the clock/line as desired and confirm.

## 5.2.4 Horizontal image position

**This menu item is only accessible when VGA input is selected.**

### To adjust the horizontal image position

1. Bring up the OSD main menu.

2. Navigate to the *VGA* menu.

3. Enter the *H Postion* submenu.
   The command bar *H Position* is highlighted and a small pointer appears to the left of it.

4. Set the horizontal image position as desired and confirm.

### 5.2.5  Vertical image position

**This menu item is only accessible when VGA input is selected.**

**To adjust the vertical image position**

1. Bring up the OSD main menu.

2. Navigate to the *VGA* menu.

3. Enter the *V Postion* submenu.
   The command bar *V Position* is highlighted and a small pointer appears to the left of it.

4. Set the vertical image position as desired and confirm.

### 5.2.6  Amplitude calibration

**About Amplitude calibration**

When Amplitude calibration is activated, the gain and offset of the analog signal will be calibrated to match the analog input range ADC (required full dynamic signal).

**To adjust the amplitude calibration**

1. Bring up the OSD main menu.

2. Navigate to the *VGA* menu.

3. Enter the *Amplitude Calibration* submenu.
   The automatic amplitude calibration is activated.

## 5.3  Display information

**About display information**

Your display model name, firmware release, monitor on time, backlight on time and signal info are available in a dedicated submenu of the OSD menu.

**To retrieve info about your display:**

1. Bring up the OSD main menu.

2. Navigate to the *Exit* menu to make the information visible on the screen.

# 6. CLEANING INSTRUCTIONS

## 6.1   Front glass

**WARNING: Before cleaning the front glass, unplug the power cable from the mains.**

**WARNING: Take care not to damage or scratch the front glass. Be careful with rings or other jewelry and do not apply pressure on the front glass.**

**WARNING: Do not apply or spray liquid directly to the front glass as excess liquid may cause damage to internal electronics. Instead, apply the liquid to the cleaning cloth.**

**WARNING: The display is not intended to be sterilized.**

**WARNING: Disable the touch screen before cleaning the display.**

### Overview

Clean the front glass using a sponge, cleaning cloth or soft tissue, **lightly** moistened with one of the following tested cleaning solutions:

- 70 percent isopropyl alcohol
- 1.6 percent aqueous ammonia
- Cidex® (2.4 percent glutaraldehyde solution)
- Sodium hypochlorite (bleach) 10 percent
- "Green soap" (USP)
- 0.5 percent Chiorhexidine in 70 percent isopropyl alcohol
- Like Cleansafe® optical cleaning liquid

In case none of the above cleaning solutions is available, use plain water.

Do **not** use following products:

- Alcohol/solvents at higher concentration > 5%
- Strong alkalis lye, strong solvents
- Acid
- Detergents with fluoride
- Detergents with ammonia
- Detergents with abrasives
- Steel wool
- Sponge with abrasives
- Steel blades
- Cloth with steel thread

## 6.2 Cabinet

**WARNING: Before cleaning the cabinet, unplug the power cable from the mains.**

**WARNING: Do not apply or spray liquid directly to the cabinet as excess liquid may cause damage to internal electronics. Instead, apply the liquid to the cleaning cloth.**

**WARNING: The display is not intended to be sterilized.**

**WARNING: The cabinet has to be checked upon collision damage; refer to qualified service personnel**

### Overview

1. Clean the cabinet using a soft cotton cloth, **lightly** moistened with a recognized cleaning product for medical equipment.
2. Repeat with water only.
3. Wipe dry with a dry cloth.

# 7. IMPORTANT INFORMATION

## 7.1    Safety information

### General recommendations

Read the safety and operating instructions before operating the device.

Retain safety and operating instructions for future reference.

Adhere to all warnings on the device and in the operating instructions manual.

Follow all instructions for operation and use.

### Electrical Shock or Fire Hazard

To prevent electric shock or fire hazard, do not remove cover.

No serviceable parts inside. Refer servicing to qualified personnel.

Do not expose this apparatus to rain or moisture.

### Type of protection (Electrical)

- Equipment with external power supply: Class I equipment
- To avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

### Degree of safety (flammable anesthetic mixture):

Equipment not suitable for use in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide.

### Use in medical equipment

Equipment primarily for use in a health care facility that is intended for use where contact with a patient is unlikely (no applied part).

In mission critical application appropriate system measures shall be foreseen to ensure failsafe operation.

The user is not supposes to touch input/output connectors and the patient at the same time.

### Mission critical applications

We strongly recommend there is a replacement display immediately available in mission critical applications.

### Use of the monitor near electrical surgical equipment like Electrical Surgical Knives

Provide as much distance as possible between the electrosurgical generator and other electronic equipment (such as monitors). An activated electrosurgical generator may cause interference with them. The interference can affect touchscreen functionality..

## Power connection

- Protective earth: to avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth. (Class I Equipment)
- The equipment must be powered from a center-tapped electrical circuit when used in the USA at voltages above 120 Volts.
- The medical approved DC power supply must be powered by the AC mains voltage (protective earth terminal).
- The equipment is intended for continuous operation.
- The equipment is powered from an external power supply for class I equipment. The installer is responsible for testing the equipment's earth ground to verify that it meets the impedance requirements for the given country regulatory requirements.
- The equipment must be earthed by a minimum 18 AWG, maximum 6 foot (1,8m) long wire connected to the ground connection at the rear of the display.
- The compliance of this monitor with Medical Safety and EMC requirements has been evaluated using the external (optional) Skynet medical power supply model SNP-A087–3. If a different power supply will be used, further investigation for Safety and EMC requirements, have to be performed at system level.

## Power cords:

- In Europe, use a power cord H05VV-F or H05VVH2-F rated 0.75mm2 250V, with a Plug rated 10A 250V. At least one European safety mark is required.
- In US and Canada, use a power cord with plug "hospital grade", provided with instructions to indicate that grounding reliability can be achieved only when the equipment is connected to an equivalent receptacle marked hospital only or hospital grade. Rating, min 18 AWG SJT 60°C 300V, Plug NEMA 5-15 P, Connector IEC 320. The cULus safety mark is required.
- Do not overload wall outlets and extension cords as this may result in fire or electric shock.
- Mains lead protection (U.S.: Power cord): Power cords should be routed so that they are not likely to be walked upon or pinched by items placed upon or against them, paying particular attention to cords at plugs and receptacles.

## Connections

- Any external connection with other peripherals must follow the requirements of clause 16 of IEC60601-1 3rd ed. or Table BBB.201 of IEC 60601-1-1 for the medical electrical systems.
- Connections to the I/O ports must be made with shielded signal cables and metallic RFI / EMI connectors to maintain compliance with Electromagnetic Compatibility Regulations.

## Water and moisture

- The equipment is IP33 compliant. The front panel only is IPx6 compliant.
- To prevent damage which may result in fire or shock hazard do not expose this appliance to rain or excessive moisture.

## Ventilation

Do not cover or block any ventilation openings in the cover of the set. When installing the device in a cupboard or another closed location, heed the necessary space between the set and the sides of the cupboard.

## Installation precautions

- Place the equipment on a flat, solid and stable surface that can support the weight of at least 3 equipments. If you use an unstable cart or stand, the equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment.
- Do not allow to climb or rest on the equipment.
- Provide full attention to safety during installation, periodic maintenance and examination of this equipment.
- Sufficient expertise is required for installing this equipment, especially to determine the strength of the wall for withstanding the display's weight. Be sure to entrust the equipment installation and attachment of this equipment to the wall to licensed contractors of Barco and pay adequate attention to safety during the installation and usage.
- Barco is not liable for any damage or injury caused by mishandling or improper installation.
- The equipment should be installed near an easily accessible outlet.
- Do not install or leave the monitor:
  - In places subject to extreme temperatures, for example near a radiator, heating vent, or in direct sunlight. Subjecting the LCD monitor to extreme temperatures, could cause deformations of the casing or malfunctions.
  - In places subject to mechanical vibration or shock.
  - Near any equipment that generates a strong magnetic field.
  - In places subject to inordinate amounts of dust, dirt, or sand, for example near an open window or an outdoor exit.
- Provide adequate ventilation to the monitor, do not block the ventilation holes.
- If setting up temporarily in an outdoor environment, be sure to take adequate precautions against airborne dust and dirt. Otherwise irreparable malfunctions could occur.
- When the monitor is assembled in the medical system, take care of the anchorage of all cables, to avoid unwanted detachment.
- Remove the protection film from the panel only after completing the entire display installation procedure.
- The product is intended for indoor use
- The monitor has been designed to be used in landscape position with 15 degrees of tilt forward or 15 degrees of tilt backward.

## This apparatus conforms to:

- 93/42/EEC, Amended by 2007/47/EC (Medical device Class I)
- EN 60601-1:2006 (3rd Ed.)
- IEC 60601-1:1988 + A1:1991 + A2:1995 (2nd Ed.)
- IEC 60601-1:2005 + Corr. 1: 2006 + Corr. 2: 2007 (3rd Ed.)
- UL60601-1 1st Ed, 2006-04-26
- ANSI/AAMI ES 60601-1: 2005
- CAN/CSA-C22.2 No 601.1-M90, 2005
- CAN/CSA-C22.2 No 60601.1:2008
- IEC/EN 60601-1-2:2007 (Medical electrical equipment. Part 1-2: General requirements for basic safety and essential performance – Collateral Standard: Electromagnetic compatibility – Requirements and tests)
- FCC 47 CFR Part 15 Sub B FCC rules for radio frequency devices: Class B

## National Scandinavian Deviations for CL. 1.7.2:

Finland: "Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan"

Norway: "Apparatet må tilkoples jordet stikkontakt"

Sweden: "Apparaten skall anslutas till jordat uttag"

## EMC notice

This device complies with appropriate medical EMC standards on emissions to, and interference from surrounding equipment. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Interference can be determined by turning the equipment off and on. If this equipment does cause harmful interference to, or suffer from harmful interference of, surrounding equipment, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna or equipment.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced technician for help.

# 7.2 Environmental information

## Disposal Information

Waste Electrical and Electronic Equipment



This symbol on the product indicates that, under the European Directive 2012/19/EU governing waste from electrical and electronic equipment, this product must not be disposed of with other municipal waste. Please dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

For more information about recycling of this product, please contact your local city office or your municipal waste disposal service.

For details, please visit the Barco website at: http://www.barco.com/en/AboutBarco/weee

## Turkey RoHS compliance



Türkiye Cumhuriyeti: AEEE Yönetmeliğine Uygundur.

[Republic of Turkey: In conformity with the WEEE Regulation]

## 中国大陆 ROHS (Chinese Mainland RoHS)

根据中国大陆《电子信息产品污染控制管理办法》(也称为中国大 陆RoHS),以下部分列出了Barco 产品中可能包含的有毒和/ 或有 害物质的名称和含量。中国大陆RoHS 指令包含在中国信息产业部 MCV 标准:"电子信息产品中有毒物质的限量要求 "中。

According to the "China Administration on Control of Pollution Caused by Electronic Information Products" (Also called RoHS of Chinese Mainland), the table below lists the names and contents of toxic and/or hazardous substances that Barco's product may contain. The RoHS of Chinese Mainland is included in the MCV standard of the Ministry of Information Industry of China, in the section "Limit Requirements of toxic substances in Electronic Information Products".

| 零件项目(名称)<br>Component name | 有毒有害物质或元素<br>Hazardous substances and elements | | | | | |
|---|---|---|---|---|---|---|
| | 铅<br>Pb | 汞<br>Hg | 镉<br>Cd | 六价铬<br>Cr6+ | 多溴联苯<br>PBB | 多溴二苯醚<br>PBDE |
| 印制电路配件<br>Printed Circuit Assemblies | X | O | O | O | O | O |
| 液晶面板<br>LCD panel | X | O | O | O | O | O |
| 外接电(线)缆<br>External Cables | X | O | O | O | O | O |
| 內部线路<br>Internal wiring | O | O | O | O | O | O |
| 金属外壳<br>Metal enclosure | O | O | O | O | O | O |
| 塑胶外壳<br>Plastic enclosure | O | O | O | O | O | O |
| 散热片(器)<br>Heatsinks | O | O | O | O | O | O |
| 风扇<br>Fan | O | O | O | O | O | O |
| 电源供应器<br>Power Supply Unit | X | O | O | O | O | O |
| 文件说明书<br>Paper Manuals | O | O | O | O | O | O |
| 光盘说明书<br>CD manual | O | O | O | O | O | O |
| O: 表示该有毒有害物质在该部件所有均质材料中的含量均在 SJ/T 11363-2006 标准规定的限量要求以下. | | | | | | |
| O: Indicates that this toxic or hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in SJ/T11363-2006. | | | | | | |
| X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 SJ/T 11363-2006 标准规定的限量要求. | | | | | | |
| X: Indicates that this toxic or hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement in SJ/T11363-2006 | | | | | | |

在中国大陆销售的相应电子信息产品（EIP）都必须遵照中国大陆《电子信息产品污染控制标识要求》标准贴上环保使用期限（EFUP）标签。Barco产品所采用的EFUP标签（请参阅实例，徽标内部的编号使用于制定产品）基于中国大陆的《电子信息产品环保使用期限通则》标准。

All Electronic Information Products (EIP) that are sold within Chinese Mainland must comply with the "Electronic Information Products Pollution Control Labeling Standard" of Chinese Mainland, marked with the Environmental Friendly Use Period (EFUP) logo. The number inside the EFUP logo that Barco uses (please refer to the photo) is based on the "Standard of Electronic Information Products Environmental Friendly Use Period" of Chinese Mainland.

Image 7-1

**RoHS**

Directive 2011/65/EC on the restriction of certain hazardous substances in electrical and electronic equipment (RoHS). Barco manufacturing process does not introduce any non-RoHS material and all the components in this product are RoHS compliant as declared by the respective suppliers.

# 7.3  Biological hazard and returns

## Overview

The structure and the specifications of this device as well as the materials used for manufacturing makes it easy to wipe and clean and therefore suitable to be used for various applications in hospitals and other medical environments, where procedures for frequent cleaning are specified.

However, normal use shall exclude biological contaminated environments, to prevent spreading of infections.

Therefore use of this device in such environments is at the exclusive risk of Customer. In case this device is used where potential biological contamination cannot be excluded.

Customer shall implement the decontamination process as defined in the latest edition of the ANSI/AAMI ST35 standard on each single failed Product that is returned for servicing, repair, reworking or failure investigation to Seller (or to the Authorized Service Provider). At least one adhesive yellow label shall be attached on the top site of the package of returned Product and accompanied by a declaration statement proving the Product has been successfully decontaminated.

Returned Products that are not provided with such external decontamination label, and/or whenever such declaration is missing, can be rejected by Seller (or by the Authorized Service Provider) and shipped back at Customer expenses.

# 7.4  Regulatory compliance information

## FCC class B

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This device generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by turning the device off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and receiver.
- Connect the device into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## Canadian notice

This ISM device complies with Canadian ICES-001.

Cet appareil ISM est conforme à la norme NMB-001 du Canada.

**IEC**

This equipment is intended for use by health care professionals only. This equipment may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, such as reorienting or relocating the or shielding the location.

**Modifications**

The FCC requires the user to be notified that any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

# 7.5   Legal disclaimer

**Disclaimer notice**

Although every attempt has been made to achieve technical accuracy in this document, we assume no responsibility for errors that may be found. Our goal is to provide you with the most accurate and usable documentation possible; if you discover errors, please let us know.

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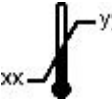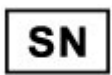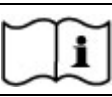
# 7.6   Explanation of symbols

**Symbols on the device**

On the device or power supply, you may find the following symbols (nonrestrictive list):

| | |
|---|---|
| CE | Indicates the device meets the requirements of the applicable EC directives. |
| FC | Indicates compliance with Part 15 of the FCC rules (Class A or Class B) |
| c㉿US | Indicates the device is approved according to the UL Recognition regulations |
| Ⓓ | Indicates the device is approved according to the UL Demko regulations |

## 7. Important information

| | |
|---|---|
| (CCC symbol) | Indicates the device is approved according to the CCC regulations |
| (VCCI symbol) | Indicates the device is approved according to the VCCI regulations |
| (KC symbol) | Indicates the device is approved according to the KC regulations |
| (BSMI symbol) | Indicates the device is approved according to the BSMI regulations |
| (USB symbol) | Indicates the USB connectors on the device |
| (DisplayPort symbol) | Indicates the DisplayPort connectors on the device |
| (factory symbol) | Indicates the manufacturing date |
| (thermometer symbol, yy, xx) | Indicates the temperature limitations[1] for the device to safely operate within specs. |
| SN | Indicates the device serial no |
| (warning lightning symbol) | **Warning**: dangerous voltage |
| (caution symbol) | **Caution** |
| (book symbol) | Consult the operating instructions |
| (WEEE crossed-out bin symbol) | Indicates this device must not be thrown in the trash but must be recycled, according to the European WEEE (Waste Electrical and Electronic Equipment) directive |
| (DC symbol) | Indicates Direct Current (DC) |
| (AC symbol) | Indicates Alternating Current (AC) |
| (stand-by symbol) | Stand-by |

---

1. Values for xx and yy can be found in the technical specifications paragraph.

# 7.7   Technical specifications

## Overview

| | |
|---|---|
| Screen technology | TFT Color LCD |
| Active screen size (diagonal) | 470,1 mm |
| Active screen size (H x V) | 409,8 mm x 230,4 mm |
| Aspect ratio (H:V) | 16:9 |
| Resolution | 1MP (1366 x 768) |
| Pixel pitch | 0,300 mm x 0,300 mm |
| Color imaging | Yes |
| Color support | RGB |
| Viewing angle (H, V) | 80°, 80° |
| Maximum luminance | 200 cm/m² |
| Contrast ratio | 1000:1 typical, 600:1 minimum |
| Response time (Tr + Tf) | 5 ms typical, 10 ms maximum |
| Scanning frequency (H; V) | 47,4 kHz; 60 Hz typical |
| Video input signals | VGA, HDMI, DisplayPort |
| USB ports | 1 upstream, 2 downstream |
| USB standard | 2.0 |
| Mains voltage | 100-240VAC; 50/60Hz |
| Monitor rating | 12VDC +10/-25%; 2,7A |
| Power consumption (nominal) | < 24 W (typical) |
| | < 2 W (power save mode) |
| Power save mode | Yes |
| Power management | DPMS |
| Dot clock | 72,33 MHz |
| OSD languages | English, Spanish, German, French, Italian, Swedish |
| Dimensions with stand (W x H x D) | Upper position: 466 mm x 442 mm x 182 mm |
| | Lower position: 466 mm x 368 mm x 182 mm |
| Dimensions w/o stand (W x H x D) | 466 mm x 313 mm x 46,5 mm |
| Dimensions packaged with stand (W x H x D) | 530 mm x 430 mm x 210 mm |
| Dimensions packaged w/o stand (W x H x D) | 530 mm x 390 mm x 180 mm |
| Net weight with stand | 6,2 kg |
| Net weight with stand (MSMD-1119-TS) | 5,6 kg |
| Net weight w/o stand | 4,6 kg |
| Net weight w/o stand (MSMD-1119-TS) | 4 kg |
| Net weight packaged with stand | 7,3 kg |
| Net weight packaged with stand (MSMD-1119-TS) | 6,7 kg |
| Net weight packaged w/o stand | 5,7 kg |
| Net weight packaged w/o stand (MSMD-1119-TS) | 5,1 kg |
| Mounting standard | VESA (75 mm and 100 mm) |

| | |
|---|---|
| Screen protection | Non-reflective finished PMMA (non touch version) / Gorilla glass (touch version) |
| Certifications | The monitor has been certified/registered by the safety agencies as Model No. MED19WDL |
| | 93/42/EEC, Amended by 2007/47/EC (Medical device Class I) |
| | EN 60601-1: 2006 (3rd Ed) |
| | IEC 60601-1 (3rd Ed) |
| | ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10) |
| | CAN/CSA-C22.2 No. 60601-1 (2208) |
| | EN/IEC 60601-1-2: 2007 |
| | FCC CFR 47 PART 15: Class B |
| IP ingress protection | IP33 (IPx6 front panel only) |
| Accessories (optional) | User Guide |
| | VGA cable |
| | USB cable |
| | EUR, UK, US mains cables |
| | External power supply |
| | Stand/handle |
| | Set of screws and fixation items |
| | DC extension cable (5 m) |
| | Power supply holder |
| Warranty | 2 years |
| Operating temperature | 10 °C – 40 °C |
| Storage temperature | -20 °C – 60 °C |
| Operating humidity | 20% – 80% (non-condensing) |
| Storage humidity | 5% – 90% (non-condensing) |
| Operation altitude | 3000 m |